HANYAO ZHANG

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EDUCATION

Columbia University
Ph.D. candidate in economics *degree expected May 2026*
Research fields: Behavioral economics, Experimental Economics

Peking University
B.A. in Economics with distinction *June 2020*

REFERENCES

Mark Dean (chair)
Professor of Economics
Columbia University
mark.dean@columbia.edu

Alessandra Casella
Professor of Economics and Political Science
Columbia University
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Ryan Oprea
Professor of Economics
University of California, Berkeley
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Michael Woodford
John Bates Clark Professor of Political Economy
Columbia University
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JOB MARKET PAPER

"Calculations Behind Lottery Valuations"

I introduce a novel experimental design tracking experimental subjects' calculations when valuing lotteries. The calculations predominantly fall into three groups: expected values, linear functions of monetary outcomes, or those unmatched to lottery primitives. Calculations exhibit remarkable within-subject stability alongside substantial between-subject heterogeneity. Calculations strongly predict valuations: subjects performing expected values-related calculations display near risk-neutrality, while on average, other subjects' valuations display extreme unresponsiveness to changes in probabilities. An analysis by calculation group reveals distinct behavioral mechanisms driving behaviors: adoption of expected-value calculations is consistent with the reductions in implementation costs from the provided calculator, while the linear functions of monetary outcomes are consistent with the theory of attribute substitution (Kahneman and Frederick, 2002).

WORKING PAPERS

"Recovering Preferences from Mistakes: An Auxiliary Task Approach"

Risk preferences recovered from lottery valuation data are not robust to unverifiable assumptions about the structure of mistakes in the valuations. To address this, we develop a novel approach utilizing Oprea's (2024) deterministic mirrors – deterministic payments that preserve key structural features of lotteries. We estimate the mistake structure in deterministic mirrors – where certain payments enable identification of mistake patterns – through a mixture model incorporating two types of mistakes frequently observed, then apply these estimates to correct lottery valuations. The corrected valuations are closer to risk neutrality than raw valuations; when they deviate from risk neutrality, they are predominantly risk averse. The corrected valuations are more aligned with expected utility theory, in contrast to the raw valuations which exhibit strong probability weighting. Our approach offers a generalizable framework for preference recovery: researchers can use auxiliary tasks with known correct answers to discipline assumptions about mistakes.

"Complexity and Choices under Risk," with Mark Dean *(draft coming soon)*

IN PROGRESS

"Reference-Dependent Motivated Beliefs," with Zhi Hao Lim

Summary: People face a trade-off when they engage in motivated reasoning about a state that realizes in the future. By manipulating their beliefs to be higher than the Bayesian belief, on the one hand, they increases their current-period anticipatory utility. But, on the other hand, their reference point in the next period increases, leading to lower next-period reference-dependent utility. The model can reconcile the mixed findings over whether people update beliefs asymmetrically facing good news and bad news. We design an experiment to test the model predictions.

PUBLICATION

Positive and Negative Sorting in Team Contest, with Qiang Fu, Zenan Wu, and Yangfan Zhou, *Journal of Industrial Economics*, 2024

SEMINAR & CONFERENCE PRESENTATIONS

2025: SWEET (UPenn), BRIC XI (ITAM), Caltech CTESS Summer Workshop, SDM III (SWUFE), UChicago Brown Bag, ESA North American Meeting, BEEMA9

TEACHING EXPERIENCE

- **Undergraduate**: Behavioral Economics, Econometrics, Microeconomics, Financial Economics
- **Graduate**: Microeconomics

AWARDS & FELLOWSHIPS

- Dissertation Fellowship, Columbia University 2025-2026
- PER Field & Experimental Grant, Columbia University 2025
- PER Summer Research Fellowship, Columbia University 2024, 2025
- CELSS Research Grant, Columbia University 2023, 2024
- Dean's Fellowship, Columbia University 2020-2025
- Excellent Graduate of Peking University, Peking University 2020
- Excellent College Graduate of Beijing, Beijing Municipal Education Commission 2020

PERSONAL

Born August 15th, 1997

Citizenship: Chinese

Languages: Chinese (native), English (fluent)